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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,130	04/13/2004	Anand G. Dabak	TT-28984A	3498
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EXAMINER				
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2419				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto@ti.com

Office Action Summary

Application No.

10/823,130

Applicant(s)

DABAK ET AL.

Examiner

Man Phan

Art Unit

2419

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 46-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 46-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

1. This communication is in response to applicant's 02/11/2009 Amendment in the application of Dabak et al. for a "*Space time transmit diversity for TDD/WCDMA systems*" filed 04/13/2004. This application is a continuation of 09/514,452 filed 02/25/2000 is now U.S. Patent #6,775,260 which claims benefit of 60/121,541 filed 02/25/1999, and claims benefit of 60/121,657 filed 02/25/1999, and claims benefit of 60/135,263 filed 05/21/1999. This application is a Request for Continued Examination (RCE) under 37 C.F.R. 1.114 filed on February 11, 2009. The proposed amendments to the claims have been entered and made of record. Claims 46-53 are pending in the application.

2. The applicant should use this period for response to thoroughly and very closely proof read and review the whole of the application for correct correlation between reference numerals in the textual portion of the Specification and Drawings along with any minor spelling errors, general typographical errors, accuracy, assurance of proper use for Trademarks TM, and other legal symbols @, where required, and clarity of meaning in the Specification, Drawings, and specifically the claims (i.e., provide proper antecedent basis for "the" and "said" within each claim). Minor typographical errors could render a Patent unenforceable and so the applicant is strongly encouraged to aid in this endeavor.

Claim Objections

3. Claim 1, line 12: "broadcast antennae" should change to -broadcast antennas—
Claim 1, line 16: "space time transit diversity" should change to -space time transmit diversity--

Claim 1, line 10: "filter circuitry" should change to --a filter circuitry--

Claim 1, line 16: "space time..." should change to --space time...--

Appropriate correction is required.

Claim Rejections - 35 USC # 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 1 12:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 1 is rejected under 35 U.S.C. 1 12, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitations "an antenna" in line 1, "the antenna" in line 8 and "broadcast antennas" in line 12. It's not clear as to whether it is reciting the transmit antenna or receive antenna within the unit.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 46-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whinnett et al. (US#6,317,411) in view of Secord et al. (US#6,373,831).

In so far, as understood with respect to claims 46, 53, the references disclose a controlling method and system for transmitter diversity technique in wireless communications, according to the essential features of the claims. Whinnett et al. (US#6,317,411) teaches a circuit, comprising an encoder circuit coupled to receive a plurality of symbols [Fig. 5, 20], the encoder circuit producing the plurality of symbols at a first output terminal [Fig. 5, top line output of 88] and a transform of the plurality of symbols at a second output terminal within a time slot [Fig. 5, bottom line output of 88 which is a transform of original data], the encoder circuit producing a sequence of predetermined signals interposed with the plurality of symbols [Fig. 5, 92 adds predetermined signals]. Whinnett et al. (US#6,317,411) further teaches a circuit wherein the first coded signal is applied to a first antenna [Fig. 5, 100]; and a second multiplier circuit coupled to receive the transform of the plurality of first symbols and arranged to multiply the transform of the plurality of first symbols by the code corresponding to the first user to produce a second coded signal [Fig. 5, 92], wherein the second coded signal is applied to a second antenna [Fig. 5, 102].

In the same field of endeavor, Secord et al. (US#6,373,831) teaches circuit is coupled to receive a control signal, the encoder circuit producing the plurality of symbols at the first output terminal and the transform of the plurality of symbols at the second output terminal in response to a first value of the control signal, the encoder circuit producing the plurality of symbols at the first output terminal and not producing the transform of the plurality of symbols at the second output terminal in response to a second value of the control signal [Col. 5, lines 43-49, power control bits which transforms the signal are only inserted depending on output signal of MUX 40 in Fig. 5]. Secord et al. (US#6,373,831) further teaches a diversity control circuit coupled to receive a first input signal, the diversity control circuit producing the control signal corresponding to the first input signal [Col. 5, lines 39-43, MUX 40 in Fig. 5 produces the control signal corresponding to the first input signal from 20]. Furthermore, It's noted that, the midamble is a designated portion of a time division channel timeslot containing a known code sequence that is used at the receiver during channel estimation. Depending on the communication system, the code sequence can be used in various forms. For example, the code sequence in an IEEE 802.16 wideband wireless access system can be used in a preamble or a pilot signal format, and in a multi-input, multi-output (MIMO) system, the code sequence can be used as a midamble format (located between two data areas).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to decide whether to transform or not plurality of symbols at second output terminal to provide additional time diversity [Col. 5, lines 37-39].

Regarding claims 47-52, the frame structure used in a W-TDD CDMA mobile communication system are well known in the art. In the UTRA TDD system all physical

channels have the structure of radio frames and timeslots. A frame used in the W-TDD CDMA mobile communication system has a length of 10 ms, and each frame is comprised of 15 time slots. Each time slot is comprised of 2560 chips includes two data parts having the same length, one midamble, and a guard period (GP). The lengths of the data parts and the midamble are divided into two types according to the burst types. In the case of a first burst type, the data parts have a length of 976 chips and the midamble has a length of 512 chips. In the case of a second burst type, the data parts have a length of 1104 chips and the midamble has a length of 256 chips. The GP has a length of 96 chips regardless of the burst types. The respective time slots can be used for either the downlink channels or the uplink channels. That is, only unidirectional transmission of either downlink-transmission or uplink transmission is available in one time slot. Due to such a frame structure, the W-TDD CDMA mobile communication system has a 96-chip non-transmission period GP at the end of every 10 ms frame, and this period has a length of 25 .mu.sec.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The Akerberg (US#6,483,826) is cited to show the utilization of plural multiple access types for mobile telecommunications.

The Fazel et al. (US#6,275,506) shows the radio transmission method for digital multimedia data signals between subscriber stations in a local network.

The Dabak et al. (US#2004/0101032) is cited to show the space time transmit diversity for TDD/WCDMA systems.

The Dabak et al. (US#6,594,473) is cited to show the wireless system with transmitter having multiple transmit antennas and combining open loop and closed loop transmit diversities.

The Dabak et al. (US#6,775,260) is cited to show the space time transmit diversity for TDD/WCDMA systems.

The Dabak et al. (US#7,218,692) is cited to show the multi path interference cancellation for transmit diversity.

The Schmidl et al. (US#6,917,597) shows the system and method of communication using transmit antenna diversity based upon uplink measurement for the TDD mode of WCDMA.

The Schmidl et al. (US#7,372,825) is cited to show the wireless communications system with cycling of unique cell bit sequences in station communications.

The Lee et al. (US#2002/0061005) is cited to show the TSTD apparatus and method for a TDD CDMA mobile communication system.

The Lee et al. (US#2006/0013151) is cited to show the TSTD apparatus and method for a TDD CDMA mobile communication system.

The Wheatley, III (US#5,437,055) is cited to show the antenna system for multipath diversity in an indoor microcellular communication system.

The Harrison (US#6,154,485) is cited to show the receiver in a wireless communications system for receiving signals having combined orthogonal transmit diversity and adaptive array techniques.

The Shimizu et al. (US#6,496,534) is cited to show the CDMA receiver with weighted interference cancellation.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (571) 272-3149. The examiner can normally be reached on Mon - Fri from 6:00 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dang Ton, can be reached on (571) 272-3171. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at toll free 1-866-217-9197.

Mphan

April 10, 2009

/Man Phan/

Primary Examiner, Art Unit 2419

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